DOCUMENT RESUME

ED 176 695 HE 011 861

AUTHOR Spaeth, Joe L.; Handler, Lynn P.
TITLE Job Satisfaction Among College Graduates.
INSTITUTION Illinois Univ., Urbana. Survey Research Lab.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE Jul 79
GRANT NIE-G-76-0077
NOTE 58p.; The appendix, Questionnaire Items for Analysis of Job Satisfaction, may not reproduce well due to marginal legibility of original

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Career Development; *College Graduates; College Majors; Females; Graduate Surveys; Higher Education; *Job Satisfaction; Males; Models; Need Gratification; Occupational Surveys; *Salaries; *Sex Role; Statistical Analysis; Work Environment

ABSTRACT

Job satisfaction for college graduates is examined in this report that focuses on subjective determinants. It is contended that many objective characteristics, such as education and earnings, have little impact on job satisfaction. Data are taken from the National Opinion Research Center longitudinal survey of college graduates from the class of 1961, which included questions on job satisfaction for 1962 and 1964. Working full-time and being in a job related to one's major were important determinants of 1962 job satisfaction for women. Job satisfaction in 1962 was also an important determinant of women's 1964 job satisfaction. Working for a government agency had only modest negative effects, and earnings had no effects among women. Challenge was the most important determinant of 1964 job satisfaction among women. For 1964 job satisfaction, satisfaction in 1962 was an important determinant for men also. Job-personality match had no effects, but men's ratings of the quality of their undergraduate training in preparing them for their current jobs had modest positive effects. Neither working for a governmental agency nor earnings affected 1964 job satisfaction among men. Ratings of the degree of challenge offered by a job were strong determinants of men's 1964 job satisfaction. Difficulties in researching and measuring job satisfaction are also examined, and the questionnaire items for analysis of job satisfaction are appended. (Author/SF)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED176695

JOB SATISFACTION AMONG COLLEGE GRADUATES

by

Joe L. Spaeth and Lynn P. Handler

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

HE 011 861

Survey Research Laboratory

University of Illinois at Urbana-Champaign

July 1979

This report was supported in part by Grant NIE-G-76-0077 from the National Institute of Education, Department of Health, Education, and Welfare. The opinions expressed herein do not necessarily reflect the position or policy of the National Institute of Education, and no official endorsement by the National Institute of Education should be inferred.

TABLE OF CONTENTS

	Page
LIST OF TABLES	iv
ABSTRACT	v
INTRODUCTION	1
THE SAMPLE OF COLLEGE GRADUATES	2
MEASUREMENT	3
MODELS OF JOB SATISFACTION	6
RESULTS	7
Job Satisfaction in 1962	7
Job Satisfaction in 1964	18
DISCUSSION	28
REFERENCES	33
APPENDIX: QUESTIONNAIRE ITEMS FOR ANALYSIS OF JOB SATISFACTION	35

LIST OF TABLES

Table		Page
1	Means and Standard Deviations of Variables in Models of Job Satisfaction in 1962, by Sex	8
2	Standardized Coefficients in Reduced-Form and Structural Equations in the Determination of Job Satisfaction in 1962, by Sex	11
3	Unstandardized Coefficients in Reduced-Form and Structural Equations in the Determination of Job Satisfaction in 1962, by Sex	16
4	Means and Standard Deviations of Variables in Models of Job Satisfaction in 1964, by Sex	20
5	Standardized Coefficients in Reduced-Form and Structural Equations in the Determination of Job Satisfaction in 1964, by Sex	22
6	Unstandardized Coefficients in Reduced-Form and Structural Equations in the Determination of Job Satisfaction in 1964, by Sex	26

ABSTRACT

This report focuses on subjective determinants of job satisfaction because many objective characteristics of jobs, such as education and earnings, have little impact on job satisfaction.

Data for this report are drawn from the National Opinion Research Center longitudinal survey of college graduates from the class of 1961, which included questions on job satisfaction in the 1962 and 1964 waves of data collection. Because career orientations of women are different from those of men, the two sexes are analyzed separately.

In 1962, variables with important positive total effects for men included working full time, being in a job that matched one's personality, and earnings. Working for a governmental agency had substantial negative total effects, which were affected very little by satisfaction with salary. Salary satisfaction was the most important "cause" of job satisfaction among men, but it is not clear whether this variable is actually a determinant or a component of job satisfaction.

Working full time and being in a job related to one's major were important determinants of 1962 job satisfaction for women. Working for a governmental agency had only modest negative effects, and earnings had no effects among women.

For 1964 job satisfaction, job satisfaction in 1962 was an important determinant for men. Job-personality match had no effects, but men's ratings of the quality of their undergraduate training in preparing them for their current jobs had modest positive effects. Neither working for a governmental agency nor earnings affected 1964 job satisfaction among men. Ratings of the degree of challenge offered by the job were much the strongest determinant of men's 1964 job satisfaction.

Job satisfaction in 1962 was also an important determinant of women's 1964 job satisfaction. Being in a job that matched her personality and the quality of her undergraduate preparation both had modest positive effects on a woman's 1964 job satisfaction. As with men, challenge was the most important determinant of 1964 job satisfaction among women, although the effects of this variable were weaker for women than for men.

However, challenge as a cause of job satisfaction has many of the same logical difficulties as satisfaction with salary. Is challenge a cause or a component? Since the literature on job satisfaction distinguishes between facet-specific measures of job satisfaction and facet-free measures based on general questions about job satisfaction, this issue is an important one.

In analyses where facet-specific measures are not used, it is rare to explain more than 20 percent of the variance in job satisfaction. When facet-specific measures are added, the coefficient of determination roughly doubles.

One reason why facet-free measures yield such low coefficients of determination may be that they are too general to tap disaffection with specific aspect of one's job. If so, job satisfaction should be defined as a weighted sum of the facet-specific components. Multivariate techniques exist for carrying out such analyses, and in future research they should be applied to the complex problem of analyzing job satisfaction.

INTRODUCTION

This report focuses on the subjective determinants of job satisfaction in a cohort of college graduates. The focus is on subjective aspects of people and their work because many objective characteristics have been shown to have little impact on job satisfaction.

Thus, educational attainment has only a weak relationship to job satisfaction. In the general population, the correlation between education and job satisfaction ranges from 0 to .15 (Jencks et al., 1972; Quinn and de Mandilovitch, 1977). Furthermore, the correlation between occupational status and job satisfaction is about .20 (Jencks et al., 1972).

This last correlation is particularly important because occupational status is a good surrogate for the cognitive complexity of work (for a discussion of this concept, see Kohn and Schooler, 1978). In fact, the correlation between complexity and status is about .8 (Spaeth, 1976; in press). One of the most important subjective determinants of job satisfaction is the worker's perception that his or her job is challenging (Quinn and de Mandilovitch, 1977; U.S. Manpower Administration, 1974). Clearly, complex jobs should be more challenging than routine ones, yet a reasonably good indicator of objective complexity is only weakly related to job satisfaction.

Similarly, there is little doubt that jobs with high earnings are more desirable than those with lower earnings (Featherman, Jones, and Hauser, 1975). Yet the relationship of earnings to job satisfaction is weak (Quinn and de Mandilovitch, 1977).

High levels of education, occupational status, and earnings correspond to a prevalent definition of success in American society, but such "success" is not strongly related to job satisfaction. Persons with the same levels of education, occupational status, and earnings will necessarily view their objectively similar occupations in very different terms.

Further evidence for the potential importance of subjective factors is the negligible relationship between job satisfaction and sex. Despite their objectively disadvantaged work situations, especially with regard to earnings, women are as satisfied with their jobs as men (U.S. Manpower Administration, 1974).

Women and men have traditionally had quite different orientations to careers. Until recently, the normative structure dictated that women were concerned with having and raising children whereas men were supposed to be concerned with advancing their careers. Women worked when

their husband's income was inadequate or when they had no small children at home (Spitze and Spaeth, 1979). Women might therefore have held jobs that were easy to combine with family responsibilities instead of those that had greatest earnings potential or opportunities for intrinsic rewards.

There are, of course, myriad subjective variables that could be seen as causes of job satisfaction. This analysis will be guided by the principle that the most important subjective variables are those pertinent to a person's actual job situation. The importance of perceived challenge attests to the validity of this principle.

This examination of subjective factors is limited by the types of data available. The data set used in this analysis is based on the National Opinion Research Center (NORC) longitudinal survey of the college graduating class of 1961. Even though this data set is quite rich, it was not designed to assess the role of subjective factors in job satisfaction. In the next section, we describe the sample used in this survey; we then turn to a discussion of the data available for analyzing job satisfaction.

THE SAMPLE OF COLLEGE GRADUATES

The data analyzed here were generated by the NORC longitudinal survey of June 1961 college graduates. Five waves of data were collected using self-admininstered questionnaires in 1961, 1962, 1963, 1964, and 1968. The first wave of the study was carried out in the spring of 1961, when the respondents were college seniors. Of 41,116 eligible persons, 86 percent returned usable questionnaires; by 1964 response had declined to 59 percent. Since no major nonresponse biases were detected through 1964 (Davis, 1964a; Spaeth and Ellis, 1969), the fifth wave was a 30 percent sample of respondents who had returned all four prior questionnaires (50 percent of the original sample). Response to this wave was 81 percent.

A two-stage sample was used, with prospective graduates sampled from 135 colleges and universities drawn roughly proportional to the number of PhDs awarded to earlier graduating classes or the number of entrants to medical or dental schools. This procedure resulted in an oversample of large schools, which has been adjusted by assigning appropriate weights to graduates of smaller schools. For further details on the sample, see Davis (1964b). All estimators in this analysis are based on weighted data, but all tests of significance are based on unweighted Ns.

Only data for white respondents are reported here because too few members of other races were available for separate analysis. Since whites comprised over 95 percent of the entire class of '61, these results provide an accurate picture of the job satisfaction of the entire class. Of the 4,868 (unweighted) respondents in 1968, 4,638 were white; of these, 2,953 were men and 1,685 were women. This analysis is

limited to the 1,497 male and 850 female respondents who worked full time in 1964.

MEASUREMENT

Since indicators of job satisfaction are available in this data set only for 1962 and 1964, all analyses here pertain to these two years (see Appendix for questionnaire items). In 1962, three items about facet-free job satisfaction were asked. Two of these, on satisfaction with the type of work and with the employer, were scored on a 5-point scale that ranged from "extremely satisfied" to "extremely dissatisfied." The third, on the job situation preferred a year hence, was scored 5 for a preference for the same type of work and the same employer and 1 otherwise. Scores on the three items were summed and divided by 3 to yield a 5-point scale.

For 1964, two items were added to those carried over from 1962: satisfaction with the job as a whole (on a 5-point scale) and whether the respondent was looking for another job (on a 4-point scale, which was converted to a 5-point scale). An index was created by summing scores on these five items and dividing by 5.

Since this analysis of job satisfaction is exploratory, the independent variables used here are the result of an extensive search process. Each variable included in this analysis produced a significant total effect on job satisfaction among men or women in 1962 or 1964. Despite the exploratory nature of this research, most of the independent variables fall rather naturally into one of a few groups that can be ordered according to their closeness to the job itself. Variables will enter the regression analysis in blocks, with those most remote from the job entered first and those closest entered last.

The first variable, age at graduation, is the only one that does not fit into a group. In the general population, age is positively related to job satisfaction, presumably because older workers have had more time to adjust to their jobs. Such an interpretation does not hold for a cohort of college graduates just embarking on occupational careers. Instead, older graduates were those who had stopped out for a period and then returned to get their bachelor's degree. It is not clear why age at graduation should affect job satisfaction, but it does have a significant effect on the job satisfaction of women in 1962. This variable, which is taken from a question on year of birth that was asked in 1968, was constructed by subtracting birth year from 1961.

The remaining independent variables fall into groups that should have meaningful relationships with job satisfaction. The first of these groups taps dimensions of personality that presumably influence a person's perceptions of a wide variety of situations. Included here are two measures, one of "optimism" and one of "pessimism." Both measures were taken from a rather long list of self-descriptive adjectives from which respondents chose the ones most characteristic of themselves.

Indicators of optimism were "cooperative," "easy going," "fun-loving," "happy," and "obliging." Indicators of pessimism were "high strung," "impetuous," "moody," and "rebellious." The entire set of 33 adjectives from the senior-year questionnaire was factored, with the indicators of optimism and pessimism forming two orthogonal factors.

Just as these two indices reflect general orientation, a third may tap an orientation to work. As a determinant of 1964 job satisfaction, 1962 job satisfaction may indicate a general tendency to be satisfied or dissatisfied with one's job. For that reason, 1962 job satisfaction is included in the analysis of 1964 job satisfaction.

A second set of variables pertains to respondents' general family situation. Among women, working may compete with family responsibilities for their time and commitment, and the necessity of combining work with family raising may lead them to be less satisfied than men with their jobs (Kalleberg, 1977). In order to estimate the effects of these competing activities, the analysis includes a dummy variable for marital status and respondents' reports on the number of children that they had.

The next set of variables pertains to the work setting itself. The analysis of 1964 job satisfaction is carried out solely with respondents who worked full time in that year. For results to be comparable, the same respondents are used for analysis of 1962 job satisfaction. Since people who were working full time in 1964 need not have been doing so in 1962, a dummy variable scored 1 for working full time in 1962 and 0 otherwise is used in the analysis of 1962 job satisfaction. Presumably, those working full time in 1962 were more committed to work as a means of career advancement than were other respondents, and they should therefore have been more satisfied with their jobs.

Also included in this group of variables is the type of employer. Three types are distinguished here: private profit-making organizations, governmental agencies, and nonprofit organizations. Profit-making employers include corporations, professional partnerships, and self-employment; governmental agencies can be federal, state, or local ones; nonprofit employers include schools, hospitals, churches, and welfare agencies. Dummy variables were created for each of the three types, with that for nonprofit organizations omitted in the analysis. The coefficients for the other two employer types therefore assess the difference in job satisfaction between employment in profit-making or governmental organizations and employment in nonprofit ones.

Moving closer to the job itself, we have a group of variables pertaining to the desirability of the job. The first of these is the number of job offers from which respondents chose when they went to work in 1962. Those who had more offers should have been able to choose a more desirable job and should therefore have been more satisfied.

Another measure of job desirability is the extent to which the job matches one's personality. In his theory of occupational choice,

Holland (1973) maintains that there are six basic types of occupations corresponding to different personality types: realistic--engineers, tool designers, and radio operators, for example; investigative--natural scientists; artistic--actors, artists, and writers; social--school teachers, social workers, and public relations workers; enterprising--business executives, lawyers, and salesmen; and conventional--bank tellers, financial analysts, and statisticians. In their senior year and in 1964, respondents were asked for which two of the six groups they would like the type of work best and for which they would like the type of work least.

In 1962 and 1964, respondents described their occupations in sufficient detail to allow coding into the three-digit categories of the 1950 U.S. Census. Gottfredson (1977) has provided a grouping of census occupations in terms of Holland's six categories. A dummy variable was scored 1 if a respondent's occupation was in one of the two best liked groups and 0 otherwise.

Another aspect of the desirability of one's job is the extent to which one expects the job to provide the most satisfaction in life. In both 1962 and 1964, respondents chose from a short list of activities those that they thought would provide the most and next most satisfaction. Included in the list was "your career or occupation." Two dummy variables were created, one for choosing career as most satisfying and the other for choosing it as next most satisfying.

In 1962, job desirability was also assessed by creating a dummy variable scored 1 if a respondent did not plan to take a degree beyond the bachelor's and 0 otherwise. It was assumed that a person with plans for a higher degree would be less committed to his or her current job than would someone who had no further degree plans.

Continuing our progression from matters distantly related to one's work toward those most closely related, we next deal with a set of variables bearing on the relationship between a person's job and his or her college training. In 1962 and 1964, respondents chose from a list of about 100 academic and professional fields the one that best characterized their job. In their senior year, they designated their major field from a similar list. For 1962 and 1964, the major field was matched against the job field. If the two fields were identical, a dummy variable was scored 1; if they differed, the dummy variable was scored 0. An additional variable available for the analysis of 1964 job satisfaction is the graduates' perceptions of the adequacy of their undergraduate training.

The next block contains one variable, earnings, which had a substantial impact on the job satisfaction of men in 1962. For both 1962 and 1964, this variable is measured by responses to a single categorical question on monthly income "from your own employment." Midpoints were assigned to all categories except the highest, "$1,000 or more," which was assigned the value of $1,100.

The degree to which one's work is perceived as challenging is a very important determinant of job satisfaction (Quinn and de Mandilovitch, 1977). Indicators of challenge are available in this data set for 1964 only. Three items were rated on 5-point semantic differential scales: the "work is" important-unimportant, "opportunities for personal growth on the job are" good-poor, and "the work is" interesting-uninteresting. Scores were summed and divided by 3, yielding a 5-point scale.

The last independent variable is satisfaction with one's salary. It would be difficult to argue that salary satisfaction should be treated as a cause of overall job satisfaction, since salary is a job-related reward and salary satisfaction is presumably one aspect of job satisfaction. However, this variable has important implications for the interpretation of other determinants of 1962 job satisfaction and is therefore included in this analysis. In 1962, salary satisfaction was measured by one question with a 5-point scale ranging from "extremely satisfied" to "extremely dissatisfied." In 1964, two additional questions were used--perceived opportunities for "making a lot of money" on one's job and "opportunities for advancement."

MODELS OF JOB SATISFACTION

Two models of the determination of job satisfaction will be estimated, one for 1962 and one for 1964. The models are block-recursive, with blocks defined according to the closeness of the block to the job itself. For 1962, the seven blocks include the following variables: (1) age at graduation, senior-year optimism, and senior-year pessimism; (2) marital status and number of children; (3) the dummy variables for full-time employment and employer type; (4) measures of job desirability--number of job offers, job-personality match, expected satisfaction from career, and the expectation of no higher degree; (5) the match between job and major; (6) earnings; and (7) satisfaction with salary.

The same principle for ordering variables applies to 1964 job satisfaction. Since 1962 job satisfaction apparently captures the effects of its determinants, it is not necessary to include these determinants in the analysis of 1964 job satisfaction. Therefore, the only variable included in the analysis of 1964 job satisfaction that was measured prior to 1964 is job satisfaction in 1962. The blocks of variables are entered in the following order: (1) 1962 job satisfaction; (2) 1964 marital status and number of children; (3) employer type; (4) job desirability--job-personality match and expected satisfaction from career; (5) college training--perceived adequacy and job-major match; (6) earnings; (7) challenge; and (8) salary satisfaction.

RESULTS

Job Satisfaction in 1962

Table 1 gives the means and standard deviations for variables in the analysis of 1962 job satisfaction. In order to make results for 1962 and 1964 comparable, these data apply to graduates who were employed full time in 1964. The unweighted Ns are 1,497 for men and 850 for women, with men comprising 64 percent of this group, just as they did in the entire sample.

The last row of Table 1 shows that the mean job satisfaction scores in 1962 were about the same for both sexes--3.6 for men and 3.8 for women. On the 5-point scale on which this variable was measured, these scores are closest to the category "somewhat satisfied," with the men slightly closer to the next category down, "neutral." The difference between the sexes is significant at the .01 level but is substantively trivial.

The data in the remainder of the table describe similarities and differences in the determinants of job satisfaction, with variables discussed in the same order as in the previous sections on measurement and models. Age has a positive influence on job satisfaction in the general population, presumably because it indicates adaptation to one's job; but among a cohort of college graduates, such an interpretation would not be valid. Instead of connoting enough life experience to produce adjustment to one's situation, age at graduation measures the extent to which one's educational career has been interrupted. A substantial number of men graduated after 22, the usual age for college graduation, whereas a smaller number of women did so. These facts are reflected in the difference between the means for the two sexes.

The two personality traits included in this analysis, optimism and pessimism, revealed no differences between the sexes. The former was measured on a 5-point scale, with both sexes receiving scores slightly below the midpoint. Pessimism was measured on a 4-point scale, with relatively few respondents believing that they were described by such negative characteristics as impetuosity and moodiness.

Men were much more likely than women to be married in 1962, and they were correspondingly more likely to have children. Despite these differences in family status, 88 percent of both sexes were working full time in that year. These figures are somewhat higher than comparable ones for all men and women in the 1962 sample owing to the restriction of the present subsample to persons who worked full time in 1964.

Men were much more likely than women to work for a profit-making employer (46 percent compared with 14 percent) and somewhat more likely to work for a governmental agency (22 percent and 10 percent, respectively). Both sexes reported in 1964 that they had received approximately two job offers for their first job, implying that there was some degree of choice available for their first postgraduate job.

TABLE 1

MEANS AND STANDARD DEVIATIONS OF VARIABLES IN MODELS OF JOB SATISFACTION IN 1962, BY SEX: WHITE COLLEGE GRADUATES WORKING FULL TIME IN 1964, CLASS OF 1961

Variable	Means		Standard deviations	
	Men (N=1497)	Women (N=850)	Men	Women
Age at graduation	24.2932	23.5812	3.8507	5.7298
Optimism, senior	2.2265	2.3403	1.3579	1.3105
Pessimism, senior	.4234	.4701	.7292	.7436
Marital status	.5421	.3001	.4983	.4584
Number of children	.5886	.2236	.9372	.7193
Work full time	.8791	.8821	.3261	.3226
Profit-making employer	.4639	.1383	.4988	.3453
Governmental employer	.2193	.1050	.4319	.3066
Number of job offers	2.1948	2.0972	1.2381	1.1419
Job-personality match	.6831	.8032	.4653	.3977
Career most satisfying	.2962	.1319	.4566	.3384
Career next most satisfying	.5101	.5003	.5000	.5001
Expect no higher degree	.2114	.2362	.4084	.4249
Job-major match	.4965	.5788	.5001	.4939
Earnings	416.3505	353.9084	207.5233	166.1061
Satisfaction with salary	3.1822	3.5456	1.2129	1.1212
Job satisfaction	3.6149	3.7681	1.1892	1.0653

The extent to which one's job and personality are congruent could be an important influence on job satisfaction. If one is in a job that is compatible with one's personality, it should be less stressful and therefore more satisfying. As Table 1 shows, 80 percent of the women and 68 percent of the men were in such jobs. The difference between the sexes may be partly artifactual. Since slightly over half of the women in the sample expected to be and were school teachers, and since "high school teacher" was one of the occupations exemplifying Holland's "social" category, the match between job and personality should be higher for women than for men. Nevertheless, the fact that two-thirds of the men were in jobs appropriate to their personalities indicates a reasonably high level of match.

Although men were substantially more likely than women to say that they expected most satisfaction in life from their career or occupation (30 percent compared with 13 percent), the difference between the sexes on this item is not overwhelming. In fact, majorities of both sexes chose "family relationships" as most satisfying. Furthermore, men and women did not differ in their assignment of second place to careers, with approximately half of each group doing so. Combining the two life satisfaction categories, 81 percent of the men and 63 percent of the women rated careers either first or second.

Plans for a degree beyond the bachelor's are included in this analysis as an indicator of commitment to one's job. A respondent who expected no higher degree was presumably committed to achieving occupational success through his or her current job. Such persons should have been more satisfied with their jobs than those who viewed the jobs as temporary expedients. In 1962, 21 percent of the men and 24 percent of the women did not expect to go any further than the bachelor's degree.

Just as one might expect people in jobs appropriate to their personalities to be more satisfied, so might one expect those in job fields closely related to their undergraduate major fields to be more satisfied. Table 1 shows that 50 percent of the men and 58 percent of the women were in such jobs. Considering that the fields were classified in considerable detail (nearly 100 categories), this is a substantial degree of match.

The 1962 earnings of men were somewhat higher than those of women. The former reported monthly salaries of $416, compared with $354 reported by the latter. Despite the wage gap favoring men, women were more satisfied than men with their salaries. Women's mean salary satisfaction scores fell about halfway between "neutral" and "somewhat satisfied," whereas men's were closer to "neutral."

Although comparisons between the sexes are an important part of this analysis, the regression results will be clearer if they are presented for each sex separately. Since the variables used were measured on a variety of scales, unstandardized coefficients would be hard to interpret; results for each sex will therefore be presented as

standardized regression coefficients. The determinants of 1962 job satisfaction among men will be discussed first. The subsequent discussion of the determinants for women will also include comparisons between the unstandardized coefficients for men and women.

We shall be interested primarily in the total and direct effects of each variable. The standardized coefficients for men are shown in the first half of Table 2. The total effects of a variable are given by its coefficient when it enters the system of regression equations. The seven columns in Table 2 correspond to the blocks defined earlier in the section on models. Thus, the total effects of age at graduation, optimism, and pessimism are shown in Column 1 and those of marital status and number of children in Column 2. Blocks of variables are added in successive columns until all variables have been included. Column 7 thus shows the total and the direct effects of satisfaction with salary, as well as the direct effects of all other variables. As a glance at the coefficients in one of the rows of Table 2 shows, the introduction of new variables changes the regression coefficients of the old variables. These changes are a good way of keeping track of how the total effects of a variable are made indirect. If the introduction of a later variable substantially reduces the coefficient of an earlier one, the effects of the earlier one are mediated by the later one.

Turning to the actual results for men, we see in Table 2 that age at graduation did not influence their 1962 job satisfaction (Column 1). Optimism had a slight positive and pessimism a slight negative effect. Marital status in 1962 had no effect on job satisfaction, but number of children was a slight positive influence (see Column 2). None of the five variables mentioned so far was an importance determinant of men's job satisfaction; the entire set explains only 4 percent of the variance.

As Column 3 shows, working full time increased a man's job satisfaction by a modest amount (coefficient = .17). Working for a profit-making employer had no effect on men's job satisfaction, but working for a governmental agency decreased job satisfaction substantially (-.27). The variables in this block are moderately important. Together with earlier variables, they explain 13 percent of the variance in job satisfaction, of which 9 percent is attributable to working full time and having a government employer.

Men with a relatively large number of job offers were slightly more satisfied in 1962 than those with fewer offers (Column 4), but the smallness of this coefficient (.11) indicates that, for the most part, men chose among roughly equivalent jobs. Note also that the coefficient for governmental employment in Column 4 differs little from that in Column 3. The dissatisfaction of men who worked for government agencies was not the result of having fewer job opportunities to choose from.

Being in a job that matched his personality was an important but hardly overwhelming determinant of job satisfaction, as the standardized coefficient of .18 indicates. On the other hand, it made no difference

TABLE 2

STANDARIZED COEFFICIENTS IN REDUCED-FORM AND STRUCTURAL EQUATIONS IN THE DETERMINATION OF JOB SATISFACTION IN 1962, BY SEX: WHITE COLLEGE GRADUATES WORKING FULL TIME IN 1964, CLASS OF 1961

Independent variable	1	2	3	4	5	6	7
				Men			
Age at graduation	.040	-.016	-.027	-.010	-.020	-.093*	-.016
Optimism, senior	.083*	.080*	.066*	.065*	.058	.063*	.040
Pessimism, senior	-.110**	-.104**	-.101**	-.098**	-.105**	-.103**	-.072*
Marital status		.050	.017	.023	.025	.018	.021
Number of children		.103*	.093*	.081*	.078	.056	.071*
Work full time			.170**	.131**	.116**	-.133*	.103*
Profit-making employer			-.021	-.016	-.035	-.154**	-.125**
Governmental employer			-.266**	-.244**	-.234**	-.217**	-.192**
Number of job offers				.109**	.100**	.077*	.059*
Job-personality match				.181**	.169**	.159**	.143**
Career most satisfying				.068	.070	.062	.073*
Career next most satisfying				.050	.053	.034	.070
Expect no higher degree				.092**	.093**	.116**	.096**
Job-major match					.105**	.082*	.057
Earnings						.360**	-.018
Satisfaction with salary							.446**
R^2	.024	.040	.132	.184	.194	.225	.362

(Table 2 continued)

TABLE 2--Continued

Independent variable	1	2	3	4	5	6	7
				Women			
Age at graduation	.158**	.136*	.124*	.107*	.102*	.097	.113*
Optimism, senior	.109*	.108*	.098*	.087*	.081	.081	.079
Pessimism, senior	-.000	.003	.010	.009	.010	.009	.012
Marital status		-.046	-.062	-.079	-.075	-.073	-.056
Number of children		.058	.061	.067	.038	.039	.031
Work full time			.175**	.150**	.133**	.096	.189**
Profit-making employer			-.143**	-.106*	-.065	-.064	-.039
Governmental employer			-.022	.002	.020	.012	.021
Number of job offers				.019	-.01[illegible]	-.020	-.036
Job-personality match				.177**	.134**	.131**	.112*
Career most satisfying				.023	.018	.017	.031
Career next most satisfying				.109*	.111*	.107*	.087
Expect no higher degree				.093*	.088*	.081	.050
Job-major match					.215**	.208**	.207**
Earnings						.057	-.074
Satisfaction with salary							.304**
R^2	.036	.039	.089	.137	.174	.176	.255

*p < .01.

**p < .001.

whether a man gave priority to career goals over other goals, and not expecting to earn a degree beyond the bachelor's increased job satisfaction only slightly. With the prior variables, the block in Column 4 explains 18 percent of the variance in job satisfaction, and those indicating job desirability (the ones added in Column 4) independently account for 5 percent.

As Column 5 shows, the total effect of a man's holding a job in the same field as his major is statistically significant but not large (.10). This finding is consistent with those of Solmon, Bisconti, and Ochsner (1977) and clearly indicates that even as early as the first year out of college, a man could find satisfying work in a field other than his major.

In 1962, earnings were a very important determinant of job satisfaction (Column 6). The coefficient of .36 shows the largest total effect for any of the variables introduced so far. Furthermore, introduction of earnings has a substantial impact on the coefficients of other variables.

With earnings in the regression equation, the effect of age at graduation becomes significant and negative. Net of earnings, younger men were slightly more satisfied than older men with their jobs. Also, full-time workers were slightly less satisfied than part-time workers. Because they earned more money, full-time workers were more satisfied than part-time workers, as is indicated by the change in the sign of these coefficients from Column 5 to Column 6. In addition, working for a profit-making employer becomes a negative influence on job satisfaction when earnings are controlled. Apparently, high earnings counterbalanced some negative aspects of working for a profit-making organization. With the effects of earnings taken into account, these negative aspects come to the fore.

Although the introduction of earnings changes the influence of some variables sharply, it changes the effects of others hardly at all. Thus, pessimists seemed to be slightly more dissatisfied than others with their jobs even with perceived job desirability and earnings taken into account. The negative effects of working for a government agency are not lessened much when earnings are taken into account. The same is true of the positive effects of being in a job consistent with one's personality.

The last independent variable to be introduced, satisfaction with salary, raises a difficult issue in the specification of this model. It is an open question whether satisfaction with one's salary is an effect or a cause of overall job satisfaction. Nevertheless, the information provided by introducing satisfaction with salary makes an important contribution to the interpretation of the effects of other variables in the model.

The direct effects in Column 7, along with the relation of Column 7 coefficients to earlier ones, suggest that the determinants of job

satisfaction fall into two somewhat independent groups. The first is related to the monetary rewards of work: earnings. The most obvious variables here are earnings and salary satisfaction, but, as we shall see, other variables also belong in this group. The second group is harder to define, but it includes the match between job and personality and seems to reflect a person's general orientation to work. Starting with the monetary variables, the impact of earnings and satisfaction with salary on the effects of these groups will be discussed in the order of their importance.

The coefficient for salary satisfaction (.45) is the largest for any variable in the analysis (see Column 7). More interesting, however, is the fact that satisfaction with salary explains all the effects of earnings on job satisfaction, as indicated by the reduction in the coefficient from .36 to -.018. Earnings apparently influence job satisfaction solely because they affect salary satisfaction. Another variable besides earnings that is responsive to the monetary nexus is employment in a profit-making organization. With the effects of earnings partialed out, such employment has a negative influence on job satisfaction. Working full time, on the other hand, has negative effects when earnings are controlled but positive effects when salary satisfaction is added.

Although working in a field that matched his major was only a modest influence on a man's job satisfaction, half of that influence is accounted for by the combination of earnings and satisfaction with salary. The job-major match affected job satisfaction because men in the same job field as their undergraduate major earned slightly more than other men. Together with the minor total effects of this variable, its responsiveness to monetary factors argues that it is not an important element of a man's orientation to his work.

Whereas the effects of the variables just discussed were influenced by monetary factors, another set of variables was not. Included in this set is pessimism, which has weak direct effects that are not reduced much by the introduction of earnings and salary satisfaction. The influence of number of children follows much the same pattern.

Of particular importance is the fact that the monetary factors do not substantially reduce the negative effects of working for a governmental employer. Thus, neither lower earnings nor less satisfaction with their salaries accounts for the dissatisfaction of government employees with their jobs.

Finally, the influence of the match between job and personality is not reduced much by the monetary factors. Working in a job congruent with one's personality is clearly a different kind of occupational value from orientation to salary; both sets of orientations were important for men in their first year out of college.

Even though the average job satisfaction of women in 1962 was about the same as that of men, the determinants of job satisfaction operated

differently for the two sexes. The second half of Table 2 shows that age at graduation (Column 1) had positive effects that were significantly different from zero for women, which was not the case for men. Although these effects are not influenced much by other variables in the model and remain significant with all regressors included, they are somewhat marginal in importance. Except when earnings is introduced (in Column 6), the difference between the unstandardized regression coefficients in Table 3 for men and women is not significant.

In a similar manner, Table 2 shows that optimism had a consistent positive influence among women, but that influence was never significantly greater than it was for men. On the other hand, the negative influence that pessimism had on a man's job satisfaction was not felt among the women. The difference in the unstandardized coefficients (Table 3) between the sexes is consistently significant.

Neither marital status nor number of children had significant effects among women (Column 2), whereas the number of children slightly influenced the job satisfaction of men. Nevertheless, the difference between the unstandardized regression coefficients is not significant. As with the men, the first five independent variables for the women are not particularly important and explain only about 4 percent of the variance.

Working full time in 1962 had a modest positive impact on a woman's job satisfaction (Column 3), as it did on a man's. Working for a profit-making employer had significantly negative total effects among women. The difference between men and women in the total effects of these variables is statistically significant.

Working for a government employer, on the other hand, did not affect a woman's job satisfaction. The difference between the very small unstandardized coefficient for women and the substantial one for men is highly significant. All of the regressors introduced so far explain 9 percent of the variance among the women, compared with 13 percent among the men.

Number of job offers also had no influence on a woman's job satisfaction (Column 4). The unstandardized coefficient denoting a positive influence for men is significantly greater than the coefficient for women. The match between job and personality had about the same total effects for women as for men.

Although expecting her career to provide the most satisfaction in her life had no effect on a woman's job satisfaction, putting her career in second place had a modest positive influence. The unstandardized coefficient for women is about twice as large as that for men, but the difference between coefficients is not significant. Not expecting to go beyond the bachelor's degree had the same slight positive effect for women as for men. All of the regressors through Column 4 explain 14 percent of the variance among the women, compared with 18 percent among the men.

TABLE 3

UNSTANDARDIZED COEFFICIENTS IN REDUCED-FORM AND STRUCTURAL EQUATIONS IN THE DETERMINATION OF JOB SATISFACTION IN 1962, BY SEX: WHITE COLLEGE GRADUATES WORKING FULL TIME IN 1964, CLASS OF 1961

Independent variable	1	2	3	4	5	6	7
				Men			
Age at graduation	.0123	-.0048	-.0084	-.0032	-.0061	-.0286	-.0049
Optimism, senior	.0729*	.0699*	.0582*	.0567*	.0508	.0551*	.0352
Pessimism, senior	-.1799**	-.1696**	-.1644**	-.1603**	-.1715**	-.1682**	-.1177*
Marital status		.1204	.0414	.0543	.0587	.0420	.0506
Number of children		.1301*	.1185*	.1028*	.0988	.0706	.0907*
Work full time			.6193**	.4767**	.4224**	-.4843*	.3739*
Profit-making employer			-.0509	-.0382	-.0826	-.3673**	-.2986**
Governmental employer			-.7639**	-.7025**	-.6714**	-.6238**	-.5509**
Number of job offers				.1052**	.0961**	-.0736*	.0565*
Job-personality match				.4628**	.4320**	.4074**	.3665**
Career most satisfying				.1778	.1815	.1626	.1904*
Career next most satisfying				.1195	.1261	.0802	.1659
Expect no higher degree				.2693**	.2723**	.3388**	.2799**
Job-major match					.2502**	.1962*	.1362
Earnings						.0021**	-.0001
Satisfaction with salary							.4374**
Constant	3.2300**	3.5056**	3.3136**	2.5801**	2.6421**	3.3693**	1.5629**

(Table 3 continued)

TABLE 3--Continued

Independent variable	1	2	3	4	5	6	7
				Women			
Age at graduation	.0293**	.0253*	.0231*	.0198*	.0189*	.0180	.0210*
Optimism, senior	.0887*	.0876*	.0795*	.0706*	.0657	.0657	.0642
Pessimism, senior	-.0003	.0044	.0146	.0126	.0144	.0130	.0167
Marital status		-.1064	-.1433	-.1830	-.1754	-.1689	-.1295
Number of children		.0853	.0908	.0998	.0566	.0574	.0456
Work full time			.5793**	.4946**	.4393**	.3162	.6251**
Profit-making employer			-.4411**	-.3263*	-.1996	-.1983	-.1210
Governmental employer			-.0766	.0067	.0687	.0424	.0723
Number of job offers				.0182	-.0178	-.0185	-.0336
Job-personality match				.4728**	.3584	.3508**	.2995*
Career most satisfying				.0712	.0555	.0542	.0962
Career next most satisfying				.2314*	.2358*	.2272*	.1860
Expect no higher degree				.2328*	.2197*	.2039	.1248
Job-major match					.4636**	.4494**	.4457**
Earnings						.0004	-.0005
Satisfaction with salary							.2891**
Constant	2.8700**	2.9771**	2.6114**	2.1717**	2.1384**	2.1641**	1.1804**

*p < .01.

**p < .001.

Having a job in the same field as her major substantially increased a woman's job satisfaction. Although the sex difference in the total effect coefficients is not significant, the difference becomes significant when other variables are added to the model. Having a job in her major field was a more important influence on a woman's job satisfaction than having a job that was congruent with her personality, which is the reverse of the situation for men.

The greatest contrast between men and women in the determinants of job satisfaction is in the effects of earnings. An important influence on the job satisfaction of men, this variable had no effects on that of women (Column 6). Furthermore, although satisfaction with salary had a substantial effect for both sexes, this effect was considerably smaller among women than among men. Since actual salary had no effect on a woman's job satisfaction, the effects of salary satisfaction were completely subjective.

The fact that a woman's job satisfaction was not influenced by her earnings means that the changes in coefficients brought about by the introduction of later variables are far fewer and less dramatic for women than for men. For the most part, the coefficients decline gradually and provide few useful clues to indirect effects.

Although earnings were not important among women, the introduction of this variable decreases the effects of working full time. In a pattern similar to that among men, the subsequent introduction of salary satisfaction brings the coefficient for full-time work back up to its prior level.

Occasionally, the failure of a later variable to produce a decline in the coefficient of an earlier one is of interpretive interest. Thus, the fact that introduction of the job-major match does not decrease by much the coefficient for job-personality match means that the two variables are basically independent in their effects. The effects of working for a profit-making employer become insignificant when the job-major field match is introduced. Part of the reason why working for a profit-making firm decreased women's job satisfaction was apparently the difficulty of finding a job in their major field.

Job Satisfaction in 1964

The model for 1964 job satisfaction includes only one variable from 1962: job satisfaction itself. The other variables that had effects on 1962 job satisfaction had either nil or indirect effects on 1964 job satisfaction. Considering that most of the 1962 variables pertained to a person's job in that year, this is not surprising. If someone changed jobs in the interim, characteristics of the old job could well have had little influence on satisfaction with the new one. If someone did not change jobs, he or she might feel that three years (the period since college graduation) was too long to stay in the same

job. In that case, a favorable characteristic in 1962 might have ceased to be one in 1964.

Before looking in detail at the process determining job satisfaction in 1964, we need to compare men and women on the levels of variables used in the analysis. Accordingly, Table 4 gives the means and standard deviations for these variables. Since the analysis of 1964 job satisfaction is based on the same persons as that for 1962, means for job satisfaction in 1962 are the same. Note in the last row of Table 4 that men's job satisfaction increased between 1962 and 1964 by an amount that was slight but enough to make the difference between men's and women's job satisfaction nonsignificant.

As one would expect, a substantial number of graduates got married in 1963 and 1964, their second and third years out of college; by 1964, 70 percent of the men and 53 percent of the women were married. The marriage rate for women in that period was greater than the rate for men, so the difference between the sexes of 24 percent in 1962 was reduced to 17 percent in 1964. Women still lagged substantially behind men in average number of children, as the means of .92 for men and .28 for women indicate.

In 1964 as in 1962, men were substantially more likely than women to work for a profit-making employer--52 percent compared with 12 percent. Consonant with the considerable job dissatisfaction among male employees in government, the percentage of men working for that employer type declined by 8 percentage points between 1962 and 1964, so that the likelihood of men and women working for a government agency in 1964 was about equal (14 and 12 percent, respectively). Since the analysis of job satisfaction for both years includes the same individuals, these figures represent true job change rather than differences in composition between different groups of respondents.

By 1964, 76 percent of the men and 84 percent of the women were in jobs that matched their personalities. Men's job changes over the 1962-64 period increased the degree of job-personality match by 8 percentage points, but women's job changes increased their match by only 4 points.

In 1964, 28 percent of the men and 14 percent of the women indicated that their careers would provide the most satisfaction in life, and 50 percent of the men, compared with 46 percent of the women, indicated that careers would be second most satisfying. The 1964 figures for the men are about the same as the 1962 ones, but a second rating for the satisfaction provided by a career declined by 4 percent among the women. The match between job and major field declined 7 percent among the men and held at about the 1962 level for the women.

In 1962, men earned $62 a month more than women. By 1964, that gap had increased to $134, or about $1,600 a year. Over the same period, women's satisfaction with their salaries declined by two-thirds of a point.

TABLE 4

MEANS AND STANDARD DEVIATIONS OF VARIABLES IN MODELS OF JOB SATISFACTION IN 1964, BY SEX: WHITE COLLEGE GRADUATES WORKING FULL TIME IN 1964, CLASS OF 1961

Variable	Means		Standard deviations	
	Men (N=1497)	Women (N=850)	Men	Women
Job satisfaction, 1962	3.6149	3.7681	1.1892	1.0653
Marital status	.7019	.5312	.4575	.4992
Number of children	.9242	.2789	1.1159	.7345
Profit-making employer	.5180	.1185	.4998	.3232
Governmental employer	.1371	.1159	.3440	.3202
Job-personality match	.7589	.8373	.4278	.3692
Career most satisfying	.2784	.1383	.4483	.3453
Career next most satisfying	.4964	.4585	.5001	.4984
Quality of undergraduate preparation	3.2560	3.3396	.7191	.7528
Job-major match	.4294	.5642	.4951	.4960
Earnings	560.3021	426.6556	215.8154	130.1308
Challenge	4.4384	4.4801	.6532	.6347
Satisfaction with salary	3.2191	2.8708	.9515	.8461
Job satisfaction, 1964	3.9175	3.8279	.9184	.8578

The 1964 data make it possible to add a variable that is an important determinant of job satisfaction in the general public: the respondent's perception of how challenging his or her job is (Quinn and de Mandilovitch, 1977). The scores of men and women on this variable are equal.

Earnings, an important objective facet of the job, showed a marked difference between the sexes in 1964. Presumably as a result, women's satisfaction with their salaries also declined between 1962 and 1964. Yet the perception of other aspects of the job, such as challenge or the degree to which it matched one's personality, did not differ much by sex in 1964, nor did overall job satisfaction.

Turning to the effects of the variables, the first influence on a man's 1964 job satisfaction to be considered here is his job satisfaction in 1962 (see first half of Table 5). The standardized coefficient of .31 in Column 1 indicates that there is considerable continuity between the two variables, but as an indication of stability, this coefficient is not large. In explaining 9 percent of the variance in 1964 job satisfaction, 1962 job satisfaction leaves 91 percent unexplained.

Note, by the way, that optimism and pessimism are absent from this analysis. Although these variables were measured in both 1962 and 1964, as well as in the senior year, they had no effect on job satisfaction in 1964. Together with the size of the coefficient for 1962 job satisfaction, these findings seem to indicate that enduring personality characteristics have little effect on job satisfaction.

As Column 2 of Table 5 shows, married men were slightly more satisfied than single men with their 1964 jobs, but number of children had no effect on a man's job satisfaction. Although statistically significant (at the .01 level), marital status is not very important. Both indicators of family status increase the coefficient of determination by only .8 percent.

Working for a profit-making organization or for a governmental agency in 1964 did not influence a man's job satisfaction (Column 3). It is perhaps more surprising that being in a job that matched his personality had no effect on the 1964 job satisfaction of a man (Column 4). The two indicators of the life satisfaction provided by a career also showed no influence on a man's job satisfaction. All three variables in Column 4 add only .5 percent to the explained variance.

A man's perception that his college had prepared him well for his job had a modest positive influence on his job satisfaction (Column 5). Net of perceived quality of preparation, being in the same job as his major actually lowered a man's job satisfaction. The coefficient of -.09, although small, is significant at the .001 level.

The negative effect of the job-major match is significant because there is a modest positive correlation (.17) between quality of preparation and having a job in one's major field. This relationship,

TABLE 5

STANDARDIZED COEFFICIENTS IN REDUCED-FORM AND STRUCTURAL EQUATIONS IN THE DETERMINATION OF JOB SATISFACTION IN 1964, BY SEX: WHITE COLLEGE GRADUATES WORKING FULL TIME IN 1961, CLASS OF 1961

Independent variable	1	2	3	4	5	6	7	8
				Men				
Job satisfaction, 1962	.307**	.300**	.301**	.296**	.286**	.283**	.182**	.154**
Marital status		.102*	.102*	.099*	.106**	.104**	.048	.052
Number of children		-.025	-.027	-.024	-.027	-.027	-.015	-.002
Profit-making employer			.017	.027	.037	.030	.104**	-.023
Governmental employer			.015	.022	.027	.024	.045	-.001
Job-personality match				.055	.045	.045	.015	.002
Career most satisfying				.015	.014	.013	-.025	-.035
Career next most satisfying				.058	.058	.057	-.004	-.021
Quality of undergraduate preparation					.155**	.155**	.063*	.058*
Job-major match					-.094**	-.096**	-.031	-.007
Earnings						.020	.016	-.037
Challenge							.524**	.448**
Satisfaction with salary								.276**
R^2	.094	.102	.103	.108	.136	.136	.376	.426

(Table 5 continued)

TABLE 5--Continued

Independent variable	1	2	3	4	5	6	7	8
	Women							
Job satisfaction, 1962	.351**	.340**	.337**	.309**	.285**	.283**	.243**	.235**
Marital status		.044	.039	.059	.066	.064	.038	.056
Number of children		.076	.071	.056	.049	.052	.061	.066
Profit-making employer			-.037	.029	.041	.034	.068	.035
Governmental employer			-.066	-.027	-.028	-.035	-.033	-.053
Job-personality match				.173**	.147**	.144**	.073	.068
Career most satisfying				.104*	.109*	.108*	.071	.078
Career next most satisfying				.110*	.109*	.107*	.079	.072
Quality of undergraduate preparation					.121**	.123**	.091*	.085*
Job-major match					.037	.031	-.002	-.000
Earnings						.057	.054	.020
Challenge							.361**	.330**
Satisfaction with salary								.163**
R^2	.123	.133	.138	.178	.194	.197	.309	.331

* $p < .01$.

** $p < .001$.

together with the positive effects that quality of preparation had on job satisfaction, makes an originally small negative correlation (-.04) large enough to be statistically significant.

The negative total effect of job-major match is as interesting as its modest correlation with perceived quality of preparation. Working in a job related to his major did not make a graduate's evaluation of his undergraduate training much more favorable. By this time, being in the same job field as his major was apparently as much a sign of stagnation as of the relevance of his undergraduate training.

The two variables are not unimportant; they add 3 percent to the coefficient of determination, with perceived preparation being the more important of the two variables.

In 1964, a man's earnings had no relationship to his job satisfaction (Column 6). This is, of course, in strong contrast to the situation in 1962, when earnings were an important influence on a man's job satisfaction. In the general population, earnings have small and positive effects (Jencks et al., 1972) that are closer in size to the nil effect for 1964 job satisfaction than to the major ones for 1962 satisfaction.

In the first year out of college, many of the men in the class of '61 may have been in entry-level jobs, such as those in management training programs. By 1964, these men would have left such preparatory jobs, and their earnings would have ceased to influence their job satisfaction.

Whereas in 1962 the watershed variable that affected the interpretation of other variables in the model was earnings, the 1964 watershed variable was the perceived challenge of the work itself. As the coefficient of .52 in Column 7 indicates, challenge was the most important determinant of a man's job satisfaction.

Furthermore, challenge mediates the effects of all the earlier variables that help explain job satisfaction. Thus, the coefficient for 1962 job satisfaction decreases by 36 percent, from .28 (Column 6) to .18 (Column 7). Over a third of the intertemporal stability in men's job satisfaction stems from the association of challenge with both variables.

Even the modest coefficient for marital status is reduced by more than half when challenge is introduced into the regression equation. Apparently, married men were in slightly more challenging jobs than single men (correlation = .10).

The negligible effect of working for a profit-making employer increases to a significant .10 when challenge enters the regression equation. The zero-order correlation between working in a profit-making organization and challenge is -.14. If the work of men in such organizations had been as challenging as the work of men in other types of orga-

nizations, their job satisfaction would have been a little higher than it was.

Men who thought that they were well prepared by their colleges perceived their work as more challenging. As a result, the coefficient for preparation is substantially reduced by the introduction of challenge. Another indication of the importance of challenge is given by the fact that this variable independently explains 24 percent of the variance in 1964 job satisfaction. The total of 38 percent accounted for by all variables including challenge is approximately the same as the coefficients of determination pertaining to the general population (Andrews and Withey, 1976).

Because challenge is such a dominant influence on job satisfaction, salary satisfaction has little to do with mediating the influence of earlier variables (Column 8). Salary satisfaction decreases slightly the coefficient for 1962 job satisfaction and reduces that of working for a profit-making employer to negligibility. The introduction of satisfaction with salary lowers the coefficient for challenge from .52 to .45. The total effect coefficient (.28) of salary satisfaction is significant.

At this point, we must return to the interpretive difficulties mentioned earlier. It is impossible to tell whether salary satisfaction is a cause or an effect of job satisfaction or whether it is a different aspect of the same measurement domain. Therefore, the fact that 43 percent of the variance is accounted for must be taken with a grain of salt.

The process by which women's job satisfaction is determined resembles the same process for the men more closely in 1964 than in 1962. For women, 1962 job satisfaction is an important determinant of 1964 job satisfaction, as the coefficient of .35 in Column 1 of the second half of Table 5 indicates. The difference between the unstandardized coefficients for the two sexes is not significant (see Table 6).

Neither marital status nor number of children influenced a woman's 1964 job satisfaction, and the same is true of employer type. These four variables add 1.5 percent to the 12.3 percent of the variance explained by 1962 job satisfaction.

Although job-personality match had no effects on a man's job satisfaction, this variable had modest positive effects on a woman's, and the unstandardized coefficient for the total effects of this variable is significantly greater for women. The view that one's occupation or career would produce the most satisfaction in life increased a woman's job satisfaction slightly, as did assigning second place to career considerations. The three variables in this block add 4 percent to the explained variance for the women.

Perceived quality of undergraduate preparation increased a woman's job satisfaction somewhat. Although being in a job that corresponded to

TABLE 6

UNSTANDARIZED COEFFICIENTS IN REDUCED-FORM AND STRUCTURAL EQUATIONS IN THE DETERMINATION OF JOB SATISFACTION IN 1964, BY SEX: WHITE COLLEGE GRADUATES WORKNG FULL TIME IN 1964, CLASS OF 1961

Independent variable	1	2	3	4	5	6	7	8
				Men				
Job satisfaction, 1962	.2370**	.2318**	.2321**	.2288**	.2209**	.2184**	.1408**	.1187**
Marital status		.2051*	.2055**	.1978*	.2136**	.2091**	.0959	.1046
Number of children		-.0208	-.0223	-.0197	-.0219	-.0223	-.0124	-.0013
Profit-making employer			.0305	.0494	.0675	.0560	.1914**	-.0418
Governmental employer			.0390	.0596	.0717	.0629	.1191	-.0024
Job-personality match				.1180	.0975	.0960	.0332	.0047
Career most satisfying				.0307	.0291	.0268	-.0522	-.0719
Career next most satisfying				.1063	.1063	.1045	-.0081	-.0382
Quality of undergraduate preparation					.1986**	.1979**	.0810*	.0740*
Job-major match					-.1744**	-.1779**	-.0578	-.0131
Earnings						.0001	.0001	-.0002
Challenge							.7365**	.6298**
Satisfaction with salary								.2661**
Constant	3.0608**	2.9549**	2.9336**	2.7853**	2.2380**	2.2154**	-.3165	-.3263

(Table 6 continued)

TABLE 6--Continued

Independent variable	1	2	3	4	5	6	7	8
	Women							
Job satisfaction, 1962	.2829**	.2735**	.2717**	.2489**	.2298**	.2278**	.1959**	.1895**
Marital status		.0757	.0669	.1014	.1127	.1091	.0661	.0957
Number of children		.0883	.0831	.0657	.0573	.0602	.0717	.0774
Profit-making employer			-.0993	.0759	.1079	.0891	.1792	.0940
Governmental employer			-.1765	-.0728	-.0740	-.0947	-.0879	-.1432
Job-personality match				.4026**	.3422**	.3340**	.1698	.1587
Career most satisfying				.2584*	.2709*	.2674*	.1754	.1944
Career next most satisfying				.1886*	.1881*	.1840*	.1352	.1233
Quality of undergraduate preparation					.1378**	.1404**	.1041*	.0967*
Job-major match					.0633	.0543	-.0027	-.0006
Earnings						.0004	.0004	.0001
Challenge							.4883**	.4459**
Satisfaction with salary								.1655**
Constant	2.7619**	2.7323**	2.7777**	2.3579**	1.9761**	1.8329**	.1102	-.0198

* $p < .01$.

** $p < .001$.

her major increased a woman's job satisfaction in 1962, this variable had no effects in 1964.

Women's 1964 earnings had no effect on their job satisfaction in that year. This state of affairs corresponds not only to the absence of an effect among men in 1964 but also to a similar absence in connection with women's job satisfaction in 1962. This pattern argues that women were not in high-potential entry-level positions in 1962, an interpretation that is supported by the fact that men's earnings increased by $144 a month between 1962 and 1964, whereas women's increased by only $73 a month in the same period.

Although the perceived challenge of the work was the most important determinant of a woman's job satisfaction in 1964 (coefficient = .36), this variable had substantially smaller effects among women than among men. As the unstandardized coefficients in Table 6 indicate, an increase of one point on the challenge scale raised a woman's job satisfaction by about half a point, whereas the same increase in challenge raised a man's job satisfaction by nearly three-fourths of a point, with the difference in coefficients significant at the .001 level at least.

Because its effects are smaller, challenge does not mediate the influence of earlier variables as dramatically among the women as among the men. When challenge is introduced into the regression equation, the effects of 1962 job satisfaction are reduced slightly. The effects of job-personality match are cut in half and reduced to nonsignificance. Although challenge also reduces the coefficient for both career-orientation variables to nonsignificance, this is done with a very small reduction in these coefficients. Challenge also brings about a similarly small reduction in the coefficient for perceived quality of undergraduate preparation.

Because of the lesser effects of challenge, the 12 regressors in Column 7 explain 31 percent of the variance among the women, compared with 38 percent among the men.

The standardized coefficient in Column 8 of Table 5 showing the influence of satisfaction with salary for women is .16, and the sex difference between the unstandardized coefficients (Table 6) is significant at the .01 level. All regressors account for 33 percent of the variance for the women, compared with 43 percent for the men, with most of the difference in the coefficients of determination attributable to the differential impact of challenge.

DISCUSSION

The principle guiding this analysis turns out to be an economical way of summarizing the results--the closer to the job, the greater the impact of an independent variable. The two strongest predictors of job satisfaction in 1964 were perceived challenge and satisfaction with salary. Variables such as perceived quality of undergraduate training,

although important, were not as strong as the two just mentioned. Even the match between job and personality had only modest effects.

Although these results seem quite reasonable, they must be viewed with some suspicion. We noted earlier that there are problems in interpreting the effects of salary satisfaction. Is this variable a cause of job satisfaction, an effect, or one aspect of it? Similar problems arise with regard to challenge. Is the perception that one's work is challenging an important factor producing satisfaction with one's job, or is it merely an expression of that satisfaction? That challenge may be an aspect of job satisfaction is recognized in the distinction between facet-free and facet-specific job satisfaction (Quinn and de Mandilovitch, 1977). Facet-free job satisfaction refers to satisfaction with one's job in general, whereas facet-specific job satisfaction refers to satisfaction with specific aspects of the job, such as challenge. The dependent variable in this analysis is facet-free job satisfaction, but the distinction between the two kinds raises disturbing logical problems, which influence our interpretation of the results of this and other studies.

For one thing, most studies explain a relatively small proportion of the variance in job satisfaction unless they use predictors that might be confounded with the dependent variable. In a national survey, objective characteristics of the work and socioeconomic characteristics of the respondents accounted for about 6 percent of the variance in job satisfaction (Campbell, Converse, and Rodgers, 1976). Among a sample of college graduates different from that analyzed in this report, "background" explained 6 percent of the variance among men and 5 percent among women (Solmon et al., 1977). The addition of other variables, including the belief that one's skills were being fully utilized, raised the coefficient of determination to .21. In the NORC sample analyzed in this report, all variables other than challenge and salary satisfaction explain 20 percent of the variance in 1964 job satisfaction among women and 14 percent among men.

Why do such characteristics explain so little of the variance? One reason may be that the global indicators of job satisfaction are neither very valid nor very reliable. Standard items tend to yield distributions that are markedly skewed toward the "satisfied" end of their scales, even when other evidence indicates that job dissatisfaction is widespread and growing (Terkel, 1974).

If global or facet-free indicators are inadequate, what could we use in their place? A better measure of job satisfaction than the standard facet-free scales might be a weighted combination of facet-specific indicators. These items seem to have a better balance between positive and negative responses, perhaps because they tend to remind workers of less desirable job features.

Techniques such as covariance-structure analysis and canonical analysis could be used to estimate a model containing an unmeasured variable corresponding to global job satisfaction. A canonical analysis,

for example, would reflect a difference between the facet-specific scales that has so far received little attention. Two such scales--financial rewards and challenge--are modestly related to education; two others--comfort and resource adequacy--are not (Quinn and de Mandilovitch, 1977). If canonical analysis were to reveal two sets of objective characteristics corresponding to the two sets of facets, the canonical correlations would almost certainly be higher than the corresponding multiple correlations based on ordinary least-squares regression analysis.

In short, most analyses of job satisfaction, including the one reported here, have not exploited the powerful multivariate statistical techniques currently available. One recommendation of this report, therefore, is for a fairly radical reconceptualization of job satisfaction. This field of research badly needs sophisticated measurement models combined with well-specified structural equation models.

Another recommendation stems from the apparently slight relationship between job satisfaction and socioeconomic achievement. This relationship is so slight that job satisfaction is seen as a "questionable payoff" to education (Quinn and de Mandilovitch, 1977).

Recent developments in sociological research have consistently shown that education has substantial payoffs in occupational achievement and that occupation has substantial payoffs in earnings. Consensus on the value of high occupational status is so great that conventional measures of this concept have been interpreted as measuring the general "desirability" of occupations (Goldthorpe and Hope, 1974).

Occupational status is also a surrogate for the amount of authority and the degree of complexity associated with a job. Occupations with greater authority pay better than other occupations (Robinson and Kelley, 1979; Roos, 1979), and complex occupations produce a greater degree of growth in cognitive capacities than do less complex ones (Kohn and Schooler, 1978).

Higher education has long been an important means of entering occupations high on complexity and authority. Even though the returns to higher education in occupational achievement and earnings may be declining (Freeman, 1976), earning a bachelor's degree is still the best single step that an individual can take to maximize his or her occupational status and earnings.

There is little doubt that higher education pays off reasonably well in the material rewards associated with occupational achievement. However, the steps that maximize one's material rewards and resources do not maximize the psychic rewards associated with job satisfaction.

In particular, why are the effects of education on job satisfaction so slight? Job satisfaction is presumably a function of the difference between one's achievements and one's aspirations. (From this point of view, the effects of age can be explained as the period of time

required for one's aspirations to become adjusted to one's achievements.)

By all objective standards, education increases achievements, including the achievement of such intrinsic rewards as complex and interesting work. If education has little relationship to job satisfaction, it follows that education must also be associated with high aspirations, perhaps because colleges and universities actually raise the aspirations of their graduates (Quinn and de Mandilovitch, 1977). Another reason, and one that is at least equally important, is that colleges and universities select persons who already have high aspirations. The substantial correlations of educational and occupational aspirations held in high school with later educational achievement attest to the importance of this selection process (Hauser, 1972). Education produces "questionable payoffs" in job satisfaction because it raises the aspirations of its recruits, who already have high aspirations. If these are the processes at work, education could hardly have different effects, and to expect it to do so would be chimerical. Education should be judged on the objective rewards that it produces, not on the subjective ones that it affects only to a modest degree.

To these considerations we may add a hypothetical one. To the extent that colleges and universities recruit persons with high occupational aspirations--in contrast to producing high aspirations in those recruits--the failure to enroll potential recruits with high aspirations could produce a net drop in job satisfaction. Whether because of increased skills or because of certification, a bachelor's degree is essential for most jobs with authority, and higher degrees are often required for access to highly complex jobs. Failure to earn the necessary degrees relegates persons to less complex and less authoritative jobs, which are objectively less challenging and could be quite frustrating to an ambitious man or woman.

This argument runs counter to the conventional wisdom about trends in the objective and subjective returns to higher education. Freeman (1976) notes declining monetary returns to college degrees and lower opportunities for high-paying jobs. This trend, which began in the early 1970s, presumably still continues. In one sense, therefore, a college degree earned now may be worth less than one was ten years ago.

However, this view loses sight of the realities of occupational recruitment. From the point of view of a person deciding whether to attend college, the occupational structure can be seen as a kind of lottery in which he or she can take limited steps to improve the odds of winning. The rules of the lottery may change so that these odds decrease. The currently lower demand for persons in occupations traditionally held by college graduates is such an instance. However, as long as a bachelor's degree is a necessary condition for entry to the most desirable occupations, earning one is a rational step because it increases the odds of entering such an occupation.

In many ways, the views just stated seem to be only common sense. Yet the cries of crisis and cataclysm seem to have drowned out such commonsense notions. No doubt, subjective orientations to the work are important, even though the importance of job satisfaction as a cause of general well-being is unclear (Andrews and Withey, 1976; Campbell et al., 1976). However, the real, objective effects of education should not be forgotten.

REFERENCES

Andrews, Frank M. and Stephen B. Withey
1976 Social Indicators of Well-Being: Americans' Perceptions of Life Quality. New York: Plenum Press.

Campbell, Angus, Philip E. Converse, and Willard J. Rodgers
1976 The Quality of American Life: Perceptions, Evaluations, and Satisfactions. New York: Russell Sage.

Davis, James A.
1964a "Attrition in the 1962 and 1963 follow-up waves of the NORC Panel Survey of June, 1961 College Graduates." Working paper. Chicago: National Opinion Research Center.

1964b Great Aspirations: The Graduate School Plans of America's College Seniors. Chicago: Aldine.

Featherman, David L., F. Lancaster Jones, and Robert M. Hauser
1975 "Assumptions of social mobility research in the U.S.: The case of occupational status." Social Science Research 4 (December):329:60.

Freeman, Richard B.
1976 The Overeducated American. New York: Academic Press.

Goldthorpe, John H. and Keith Hope
1974 "Occupational grading and occupational prestige." Pp. 19-79 in Keith Hope (ed.). The Analysis of Social Mobility: Methods of Approaches. Oxford: Clarendon Press.

Gottfredson, Linda S.
1977 A Multiple Labor Market Model of Occupational Achievement. Report No. 225. Baltimore: Center for Social Organization of Schools, Johns Hopkins University.

Hauser, Robert M.
1972 "Disaggregating a social-psychological model of educational achievement." Social Science Research 1 (June):159-88.

Holland, John L.
1973 Making Vocational Choices. Englewood Cliffs, N.J.: Prentice-Hall.

Jencks, Christopher, Marshall Smith, Henry Acland, Mary Jo Bane, David Cohen, Herbert Gintis, Barbara Heyns, and Stephen Michelson
1972 Inequality: A Reassessment of the Effect of Family and Schooling in America. New York: Basic Books.

Kalleberg, Arne L.
1977 "Work values and job rewards: A theory of job satisfaction." American Sociological Review 42 (February):124-43.

Kohn, Melvin L. and Carmi Schooler
1978 "The reciprocal effects of the substantive complexity of work and intellectual flexibility: A longitudinal assessment." American Journal of Sociology 84 (July):24-52.

Quinn, Robert P. and Martha S. Baldi de Mandilovitch
1977 Education and Job Satisfaction: A Questionable Payoff. NIE Papers in Education and Work, No. 5. Washington, D.C.: National Institute of Education.

Robinson, Robert V. and Jonathan Kelley
1979 "Class as conceived by Marx and Dahrendorf: Effects on income inequality and politics in the United States and Britain." American Sociological Review 44 (February):38-57.

Roos, Patricia A.
1979 "Sexual stratification in the workplace: Male-female differences in economic returns to occupation." Unpublished paper.

Solmon, Lewis C., Ann S. Bisconti, and Nancy L. Ochsner
1977 College As a Testing Ground for Jobs. New York: Praeger.

Spaeth, Joe L.
1976 "Cognitive complexity: A dimension underlying the socio-economic achievement process." Pp. 103-31 in William H. Sewell, Robert M. Hauser, and David L. Featherman (eds.), Schooling and Achievement in American Society. New York: Academic Press.

in press "Vertical differentiation among occupations." American Sociological Review 44.

Spaeth, Joe L. and Richard A. Ellis
1969 "Attrition and bias in the sample." Working paper. Chicago: National Opinion Research Center.

Spitze, Glenna D. and Joe L. Spaeth
1979 "Employment among married female college graduates." Social Science Research 8 (June):184-99.

Terkel, Studs
1974 Working: People Talk About What They Do All Day and How They Feel About What They Do. New York: Pantheon.

U.S. Manpower Administration
1974 Job Satisfaction: Is There a Trend? Manpower Research Monograph No. 30. Washington, D.C.: U.S. Government Printing Office.

APPENDIX

QUESTIONNAIRE ITEMS FOR ANALYSIS OF JOB SATISFACTION*

JOB SATISFACTION

B_{16}. How do you feel about your job?

	Extremely Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Extremely Dissatisfied
Type of work *(Circle one)*	5	4	3	2	1
Salary *(Circle one)*	5	4	3	2	1
Employer or firm *(Circle one)*....	5	4	3	2	1

B_{17}. Thinking ahead one year from now, which job situation would you prefer and which job situation do you realistically expect? *(Circle one in each column)*

	I Would Prefer *(Circle one)*	I Realistically Expect *(Circle one)*
Same field of work, same employer.....	1	1
Same field, different employer.....	2	2
Different field of work, same employer.....	3	3
Different field of work, different employer.....	4	4
Not working full time.....	5	5

D30. In general, how do you feel about your job? *(Circle one in each row.)*

	Extremely Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Extremely Dissatisfied	Self Employed
Type of work	5	4	3	2	1	
Salary	5	4	3	2	1	
Employer or firm	5	4	3	2	1	9
The job as a whole	5	4	3	2	1	

D 31. Thinking ahead one year from now, which situation would you prefer and which do you realistically expect? *(Circle any that apply in each column.)*

	I Would Prefer *(Circle any that apply)*	I Realistically Expect *(Circle any that apply)*
In School: Studying in a field relevant to present job.....	X	3
In School: Studying in a different field from my present job	0	4
Same field of work, same employer.....	1	5
Same field, different employer.....	2	6
Different field of work, same employer.....	3	7
Not working:		
Housewife	4	8
Other (Circle and Specify)_____	5	9

*Questions are identified by wave with letters assigned to each wave as follows: A, 1961 (senior year); B, 1962; D, 1964; and E, 1968.

31 A. Are you looking for another job? *(Circle the number that best describes your situation)*

Yes, I am actively looking right now 1
No, but I am seriously considering it 2
No, but I might take a new job if someone offered it to me 3
No, and I would not consider changing jobs at this time 4

AGE

E 43. In what year were you born? 19_____

OPTIMISM AND PESSIMISM

A 62. Listed below are some adejectives, some of which are "favorable," some of which are "unfavorable," some of which are neither.

Please circle the ones which best describe you. Consider only those which are most characteristic of you as a person. (Most people choose five or six, but you may choose more or fewer if you want to.)

Ambitious X	Good Looking X	Moody X
Athletic 0	Happy 0	Obliging 0
Calm 1	Hard Driving 1	Outgoing 1
Cautious 2	High Strung 2	Poised 2
Cooperative . . . 3	Idealistic 3	Quiet 3
Cultured 4	Impetuous 4	Rebellious . . . 4
Dominant 5	Intellectual 5	Reserved 5
Easy Going . . . 6	Lazy 6	Shy 6
Energetic 7	Low Brow 7	Sophisticated . . 7
Forceful 8	Methodical 8	Talkative 8
Fun Loving . . . 9	Middle Brow 9	Witty 9

FAMILY STATUS

B 2. What is your current marital status? *(Circle one)*

Single, no definite plans to be married at present 0
Single, have definite plans to be married before Sept. 1, 1962 1
Single, have definite plans to be married, after Sept. 1, 1962 2
Widowed, Divorced, Separated *(answer A only)* 3
Married *(answer A and B)* 4

IF WIDOWED, DIVORCED, SEPARATED, ANSWER A ONLY:
IF MARRIED, ANSWER A AND B:

A. How many children do you have now (count a current pregnancy as one child)? *(Circle one)*

None 0
One 1
Two 2
Three 3
Four or more 4

B. What is your spouse doing this Spring? *(Circle any which apply)*

Working full-time X
Working part-time 0
Military service (full-time active duty) ... 1
Housewife, mother 2
Going to school 3
Other *(Circle and Specify)*_____ 4

D2. What is your current marital status? (*Circle one*)

Single, no definite plans to be married at present	0
Single, have definite plans to be married	1
Widowed, Divorced, Separated	3
Married	4

IF MARRIED:

A. What is your spouse doing this Spring? (*Circle any that apply*)

Working full-time	X
Working part-time	0
Military service (full-time active duty)	1
Housewife, mother	2
Going to school	3
Other (Circle and Specify) _____	4

IF MARRIED, WIDOWED, DIVORCED, SEPARATED:

B. How many children do you have now (count a current pregnancy as one child)? (*Circle one*)

None	0
One	1
Two	2
Three	3
Four or more	4

EMPLOYMENT

B1. What are you doing this Spring? (*Circle any which apply*)

Working full-time	4
Working part-time	5
Military service (full-time active duty)	6
Housewife, mother	7
Going to school	8
Other (*Circle and Specify*) _____	9

D1. What are you doing now (since the first of the year)? (*Circle any that apply*)

Working full-time	4
Working part-time	5
Military service (full-time active duty)	6
Housewife, mother	7
Going to school	8
Other (Circle and Specify) _____	9

EMPLOYER TYPE

B12. Which of the following best describes your employer? (*Circle any that apply*)

I am self-employed, or in business owned by my family	Y
Private company with 100 or more employees	X
Private company with fewer than 100 employees	0
Professional partnership	1
Research organization or institute	2
College or University or Junior College	3
Elementary or Secondary School or School System	4
Hospital or Clinic	5
Church, Welfare, or other non-profit organization	6
Federal Government (U.S.)	7
State or Local Government	8
Other (*Circle and Specify*) _____	9

D 17. **Which of the following best describes your employer?** *(Circle as many as apply)*

I am self-employed, or in business owned by my family	1
I have my own professional office	2
Professional partnership	3
Private profit-making company or corporation	4
College or university	5
Junior college	6
Non-profit research organization or institute, not affiliated with a university	7
Public welfare organization	8
Private welfare organization	9
Hospital or clinic	1
Elementary or secondary school or school system (not junior college)	2
Federal government (U.S.)	3
State government	4
Local government	5
Church	6
Other (Circle and Specify)	7

NUMBER OF JOB OFFERS

D9. **Approximately how many offers of "solid job opportunities" did you have at the time you accepted your first job after the bachelor's degree and your current (or last job)?** *(Circle one in each column)*

	First Job	Current (or last) Job
One	1	1
Two	2	2
Three or four	3	3
Five or more	5	5
Current job is first job		Yes 1 / No 0

JOB-PERSONALITY MATCH

A30. Listed below are six groups of occupations. The occupations within each group are similar to each other in many ways.

In Column A, circle the two types you would like best.

In Column B, circle the two types you would like least.

Consider the jobs as a group, not particular ones, and rate them only in terms of whether you would like that type of work regardless of whether such jobs are realistic career possibilities. Disregard considerations of salary, social standing, future advancement, etc.

Occupations	A. Two Best Liked Groups	B. Two Least Liked Groups
Construction inspector, electrician, engineer, radio operator, tool designer, weather observer	X	X
Physicist, anthropologist, astronomer, biologist, botanist, chemist	0	0
Social worker, clinical psychologist, employment interviewer, high school teacher, physical education teacher, public relations man	1	1
Bank teller, financial analyst, IBM equipment operator, office manager, statistician, tax expert	2	2
Business executive, buyer, hotel manager, radio program director, real estate salesman, sales engineer	3	3
Actor, commercial artist, musician, newspaper reporter, stage director, writer	4	4

D79. Listed below are six groups of occupations. The occupations within each group are similar to each other in many ways.
In Column A, circle the two types you would like best.
In Column B, circle the two types you would like least.
Consider the jobs as a group, not particular ones, and rate them only in terms of whether you would like that type of work regardless of whether such jobs are realistic career possibilities. Disregard considerations of salary, social standing, future advancement, etc.

Occupations	A. Two Best Liked Groups (*Circle Two*)	B. Two Least Liked Groups (*Circle Two*)
Construction inspector, electrician, engineer, radio operator, tool designer, weather observer	X	4
Physicist, anthropologist, astronomer, biologist, botanist, chemist	0	5
Social worker, clinical psychologist, employment interviewer, high school teacher, physical education teacher, public relations man	1	6
Bank teller, financial analyst, IBM equipment operator, office manager, statistician, tax expert	2	7
Business executive, buyer, hotel manager, radio program director, real estate salesman, sales engineer	3	8
Actor, commercial artist, musician, newspaper reporter, stage director, writer	4	9

B13. Please describe:

A. What kind of work do you do (e.g., high school physics teacher, assistant sales engineer, wheat farmer, clothing buyer for department store)? _____

_____

B The two major duties: (1) _____

_____

(2) _____

_____

D16. Please describe:

A. What kind of work do you do (e.g., high school physics teacher, assistant sales engineer, wheat farmer, clothing buyer for department store)? _____

_____

B. The two major duties: (1) _____

_____

(2) _____

_____

SATISFACTION FROM CAREER

B51. Which of the following do you expect to give you the most satisfaction in your life?

	Most Satisfaction (*Circle one*)	Next Most Satisfaction (*Circle one*)
Your career or occupation	X	X
Family relationships	0	0
Leisure-time recreational activities	1	1
Religious beliefs or activities	2	2
Participation as a citizen in the affairs of your community	3	3
Participation in activities directed toward national or international betterment	4	4

D 85. Which of the following do you expect to give you the most satisfaction in your life? (*Circle one in each column.*)

	Most Satisfaction	Next Most Satisfaction
Your career or occupation	1	1
Family relationships	2	2
Leisure-time recreational activities	3	3
Religious beliefs or activities	4	4
Participation as a citizen in the affairs of your community	5	5
Participation in activities directed toward national or international betterment	6	6

HIGHER DEGREE PLANS

B6. Please indicate:

	The highest degree you now hold (*Circle one*)	The next degree you expect to receive (*Circle one*)	The highest degree you expect to gain eventually (*Circle one*)
None or no further degree	0	0	0
Bachelor's (undergraduate) e.g., B.A., B.S., B.E., B.Phar., etc.	1	1	1
POST BACHELORS: Professional e.g., LL.B., MSW, M.D., J.D., M.Ed., etc.	2	2	2
POST BACHELORS: Arts and Science Master's e.g., M.A., M.S., etc	3	3	3
POST BACHELORS: Doctorate e.g., Ph.D., Ed.D., J.S.D., etc.		4	4

MAJOR AND JOB FIELDS

IMPORTANT NOTE:

On pages 6 and 7 of this questionnaire is a list of fields of study and employment. Each one can be used to describe a field of study or a type of job. Thus, for example, in questions about fields of study, "Psychology" means college courses in psychology; in questions about careers, "Psychology" means the occupation of psychologist.

When you have chosen the field or occupation from the list which is your answer to one of the questions below, please write the two numbers or letters of that field in the double box at the end of that question. For example, if "Clinical Psychology" is now your major field, write its code number (70) in the boxes at the end of question 18 thus:

7	0

A 18. Present major field?

If you have a joint major, give the one with the most course credits.

B 11. What field best describes your job? (Inside the letter enclosed with the questionnaire is a list of fields of employment and study. *Enter the code number that best describes your job.)*

D 15. What field best describes your job? (Inside the letter enclosed with the questionnaire is a list of fields of employment and study.) (*Enter the code number that best describes your job.*)

LIST OF FIELDS

MILITARY SERVICE, MILITARY SCIENCE

911 Military Service, Military Science (as either career field or current employment)

BUSINESS AND ADMINISTRATION

82 Advertising, Public Relations
91 Accounting
97 Secretarial Science (or employed as a secretary)
42 Clerical Work, Office Work (other than secretarial)
43 Sales (Retail or Wholesale, Real Estate, Insurance, etc.)
44 Finance (Banking, Capital Management)
48 Marketing, Market Research
49 Purchasing (or employed as Purchasing Agent, Buyer, etc.)
411 Management, Business Administration (or employed as Manager or Management Trainee not covered by any other fields)
81 All other business and commercial fields (Personnel Work, Industrial Relations, Production, etc.)
93 Public Administration (or employed as Government Administrator if not covered by other fields)

ENGINEERING

10 Aeronautical
11 Civil (including Agricultural, Architectural, Civil, Sanitary)
12 Chemical (including Ceramic)
13 Electrical
14 Engineering Science, Engineering Physics, Engineering Mechanics
15 Industrial
16 Mechanical (including Naval Architecture and Marine, Welding, Textile)
17 Metallurgical
18 Mining (including Mining, Geological, Geophysical, Petroleum)
111 Engineering, General and other specialties

PHYSICAL SCIENCE (NOTE: Secondary School Science Teaching is Classified under Education)

01 Astronomy, Astrophysics
02 Chemistry (excluding Biochemistry which is 32)
03 Physics (excluding Biophysics which is 34)
04 Geography
05 Geology, Geophysics
06 Oceanography
07 Metallurgy
08 Meteorology (Atmospheric sciences)
100 Physical Science, General and other specialties

09 Mathematics and Statistics (NOTE: Secondary School Mathematics Teaching is classified under Education)

EDUCATION (NOTE: Junior College, College and University Teaching should be coded by Field of Specialization, not as Education)

50 Elementary (including Kindergarten and Nursery School)

Secondary—Academic Subject Fields

51 English
52 Modern Foreign Languages
53 Latin, Greek
54 History, Social Studies
55 Natural Science (General, Physics, Chemistry, Biology, etc.)
56 Mathematics

Specialized Teaching Fields

57 Physical Education, Health, Recreation
58 Music Education
59 Art Education
60 Education of Exceptional Children (Including Speech Correction)
61 Agricultural Education
62 Home Economics Education
63 Business Education
64 Trade and Industrial Education (Vocational)
65 Industrial Arts Education (Non-Vocational)
66 Counseling and Guidance
67 Educational Psychology
68 Administration and Supervision
611 Education, General and other specialties

HEALTH PROFESSIONS

20 Dentistry or Pre-Dentistry
21 Medicine or Pre-Medicine
22 Nursing
23 Optometry
24 Pharmacy
25 Physical Therapy
26 Occupational Therapy
27 Veterinary Medicine or Pre-Veterinary
28 Medical Technology or Dental Hygiene
211 Other Health Fields
69 Nutrition

BIOLOGICAL SCIENCES

19 Ecology
29 Plant Physiology
30 Anatomy
31 Biology
32 Biochemistry
33 Botany and Related Plant Sciences
34 Biophysics
35 Entomology
36 Genetics
37 Microbiology (including Bacteriology, Mycology, Parasitology, Virology, etc.)
38 Pathology
39 Pharmacology
40 Physiology
41 Zoology
311 Other Biological Science Fields
511 Plant Pathology

AGRICULTURAL AND RELATED FIELDS

45 Agricultural Sciences (including Animal Husbandry, Agronomy, Farm Management, Horticulture, Soil Science, Soil Conservation, etc.)
46 Forestry, Fish and Wild Life Management
47 Veterinary Medicine
47 Farming (Code as occupation only, not as field of study)

PSYCHOLOGY (NOTE: Code Psychiatry as Medicine 21)

70 Clinical Psychology
66 Counseling and Guidance
67 Educational Psychology
71 Social Psychology
72 Industrial and Personnel Psychology
73 Experimental and General Psychology
74 Other Psychological Fields

SOCIAL SCIENCES

75 Anthropology, Archeology
76 Economics
04 Geography
83 History
77 Area and Regional Studies
78 Political Science, Government, International Relations
93 Public Administration
79 Sociology
95 Social Work, Group Work
711 Social Science, General and Other

HUMANITIES

80 Fine and Applied Arts (Art, Music, Speech, Drama, etc.)
81 English, Creative Writing
82 Classical Languages and Literatures
83 History
84 Modern Foreign Languages and Literatures
85 Philosophy
811 Humanities, General and Other Fields

OTHER FIELDS AND OCCUPATIONS

86 Architecture, City Planning
94 Foreign Service (Code as occupation only, not field of study)
98 Home Economics (Code either as a field of study or as an occupation if you mean working as a home economist for pay)
99 Housewife (Code as occupation only, not as field of study)
87 Journalism, Radio-Television, Communications
95 Law, Pre-Law
88 Library Science, Archival Science
95 Social Work, Group Work
89 Theology, Religion (Employment as a Clergyman or a religious worker)

110 Field of Study or Job Which has no Near Equivalent in this List. (If you use this code, please describe your field in a word or two under the questions where it applies.)

101 Do not expect to be either employed full time or to be a Housewife. (Code only for questions about careers, not for field of study.)

997 None
999 Not employed

ADEQUACY OF UNDERGRADUATE TRAINING

D25. How well would you say your academic training has prepared you to do the major duties of your present job? *(Circle one)*

Very well	4
Moderately well	3
Not very well	2
Not well at all	1

IF NOT VERY WELL OR NOT WELL AT ALL:

A. Was this because . . . .*(Circle the number that best describes your situation.)*

I had training in this field, but it did not prepare me for this job	1
I did not have *enough* training in this field, although I took courses in it	2
I need academic training in a field in which I took no courses	3
Academic training is not relevant to my present position	4

EARNINGS

B 57. Please estimate your current average monthly income before taxes and deductions. Do not include any income you may have from scholarships, assistantships, or other stipends awarded to students. *(Circle one in each column)*

	From Your Own Employment *(Circle one)*	Total Monthly Income (Including spouse's and other income) *(Circle one)*
None	0	0
$1 - 199	1	1
$200 - 299	2	2
$300 - 399	3	3
$400 - 599	4	4
$600 - 799	5	5
$800 - 999	6	6
$1,000 or more	7	7

D108. Please estimate your current average monthly income before taxes and deductions. *Do not* include any income you may have from scholarships, assistantships, or other stipends awarded to students. *(Circle one in each column)*

	Total Monthly Income (Including spouse's and other income)	Income From *Your own Employment*	
None	0	0	None
$1 - 199	1	1	$1 - 199
$200 - 299	2	2	$200 - 299
$300 - 399	3	3	$300 - 399
$400 - 499	4	4	$400 - 499
$500 - 599	5	5	$500 - 599
$600 - 699	6	6	$600 - 699
$700 - 799	7	7	$700 - 799
$800 - 999	8	8	$800 - 99?
$1,000 or more	9	9	$1,000 or more

CHALLENGE

D26. **Rate each of the following in terms of your present job.** *(Circle one in each row)*

		Very	Fairly	Neither	Fairly	Very	
Work situation is:	COMPETITIVE	1	2	3	4	5	COOPERATIVE
I see the specific results of my work:	OFTEN	5	4	3	2	1	RARELY
The work is:	REPETITIVE	1	2	3	4	5	VARIED
Work hours are:	FLEXIBLE	5	4	3	2	1	INFLEXIBLE
Job security is:	GREAT	5	4	3	2	1	LITTLE
Work is:	PREDICTABLE	1	2	3	4	5	UNPREDICTABLE
I work under time pressures:	OFTEN	1	2	3	4	5	RARELY
Opportunities for making policy decisions are:	FEW	1	2	3	4	5	MANY
Work is:	IMPORTANT	5	4	3	2	1	UNIMPORTANT
To find out how well I'm doing is:	EASY	5	4	3	2	1	HARD
Opportunities for personal growth on the job are:	GOOD	5	4	3	2	1	POOR
I take work home:	OFTEN	1	2	3	4	5	RARELY
Work is:	UNINTERESTING	1	2	3	4	5	INTERESTING

SATISFACTION WITH SALARY

B16. **How do you feel about your job?**

	Extremely Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Extremely Dissatisfied
Type of work *(Circle one)*	5	4	3	2	1
Salary *(Circle one)*	5	4	3	2	1
Employer or firm *(Circle one)*....	5	4	3	2	1

D28. **Please rate your job in terms of the opportunities it gives you for achieving each of the following.** *(Circle one in each row.)*

	Chances for this in my job are . . .		
	Excellent	Average	Poor
Making a lot of money	3	2	1
Being original and creative	3	2	1
Being helpful to others or useful to society	3	2	1
Avoiding a high-pressure job which takes too much out of you	3	2	1
Living and working in the world of ideas	3	2	1
Freedom from supervision in my work	3	2	1
Opportunities for moderate but steady progress rather than the chance of extreme success or failure	3	2	1
A chance to exercise leadership	3	2	1
Working with people rather than things	3	2	1
Opportunities for advancement	3	2	1
A stable secure future	3	2	1

D30. **In general, how do you feel about your job?** *(Circle one in each row.)*

	Extremely Satisfied	Somewhat Satisfied	Neutral	Somewhat Dissatisfied	Extremely Dissatisfied	Self Employed
Type of work	5	4	3	2	1	
Salary	5	4	3	2	1	
Employer or firm	5	4	3	2	1	9
The job as a whole	5	4	3	2	1	